



National Institute of
Diabetes and Digestive
and Kidney Diseases

Prevention of Urinary Incontinence

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National Institute of Diabetes and Digestive
and Kidney Diseases

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Disclosures

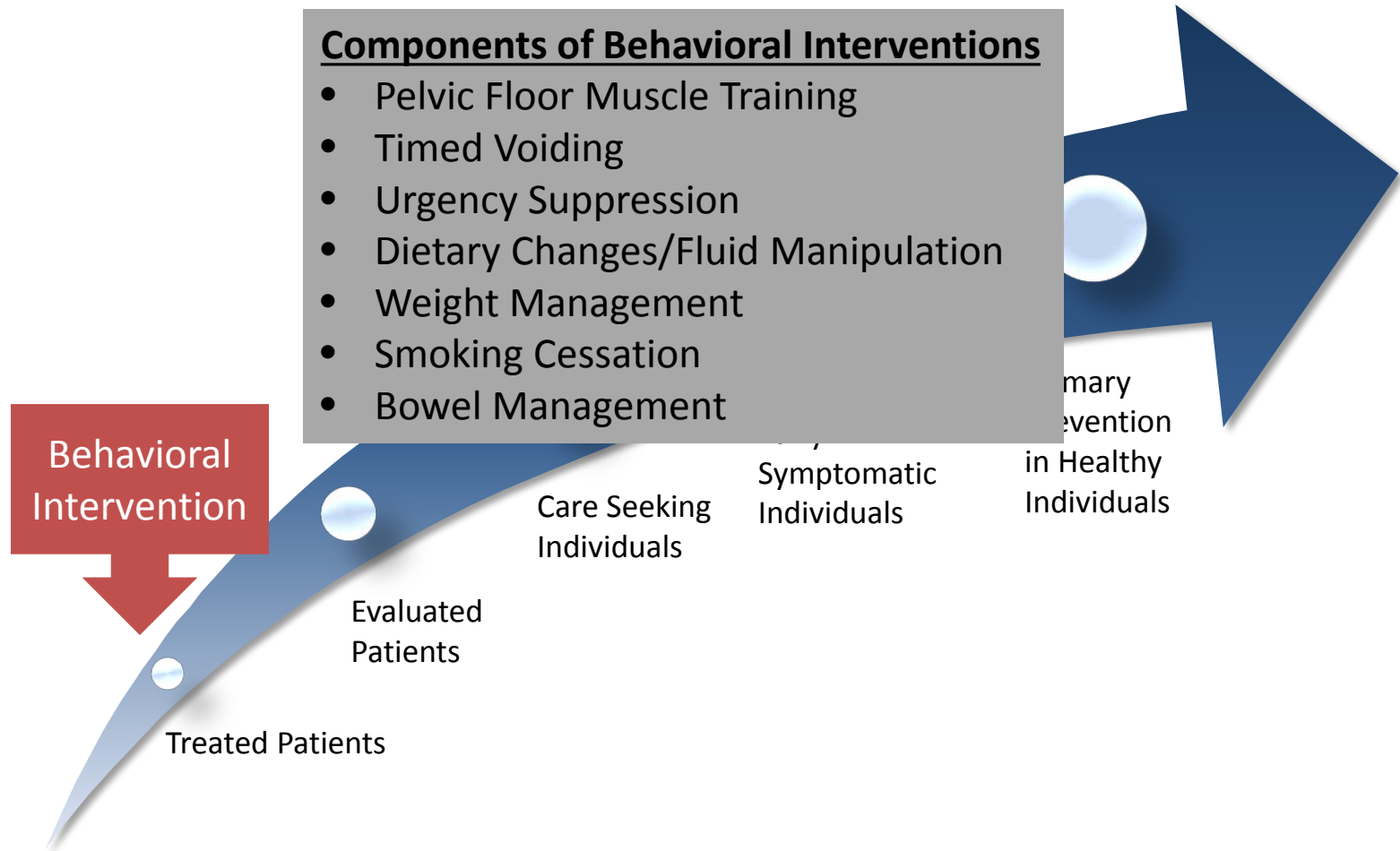


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Key Abbreviations

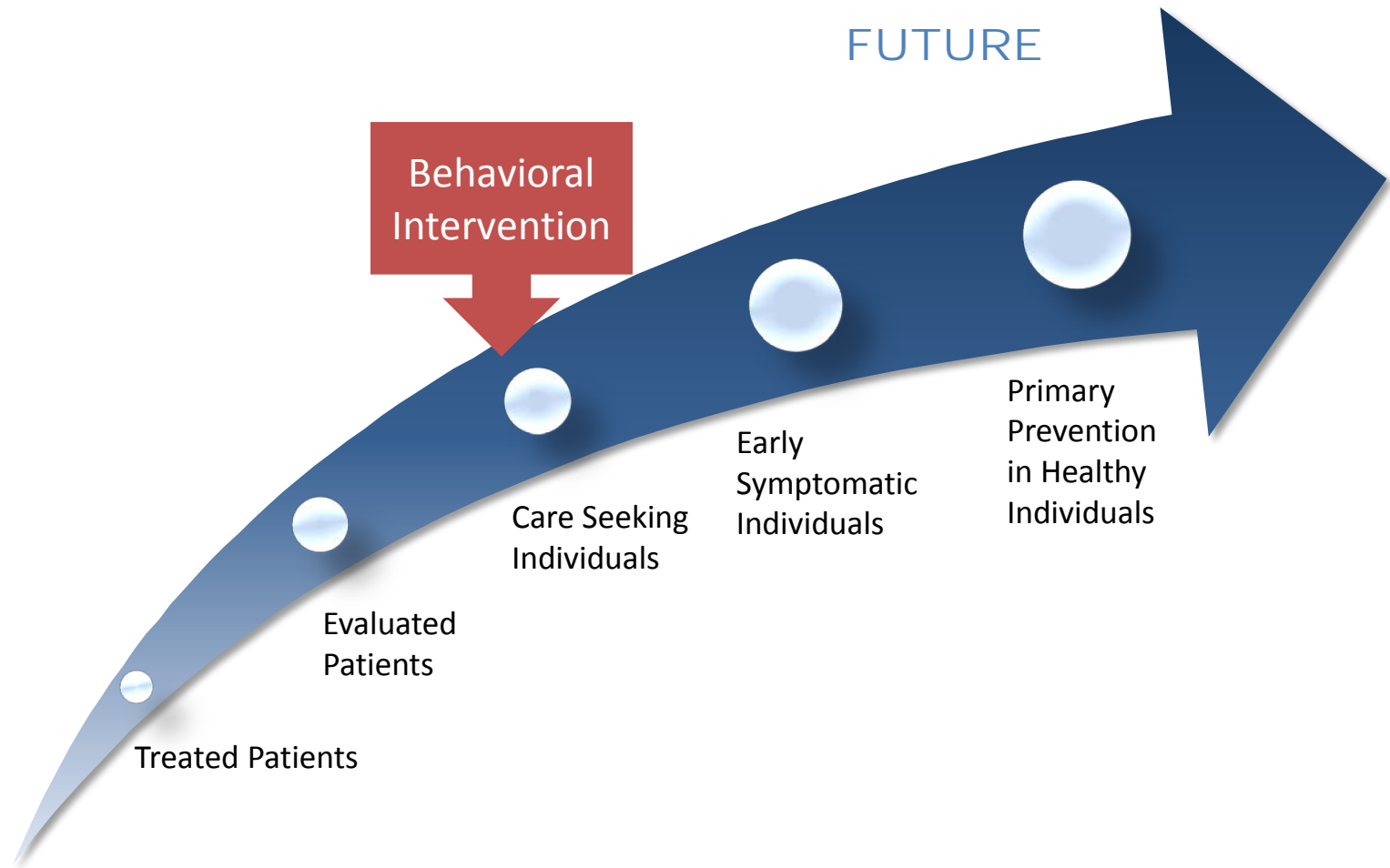
Abbreviation	What it Means
UI	Urinary Incontinence
LUTS	Lower Urinary Tract Symptoms
BMP	Behavioral Modification Program
ICIQ-SF	International Consultation on Incontinence Questionnaire-Short Form
BT	Bladder Training
PMT	Pelvic (floor) Muscle Training
PLUS	Prevention of Lower Urinary Tract Symptoms
TULIP	Translating Unique Learning for Incontinence Prevention

Evolution from Treatment to Prevention



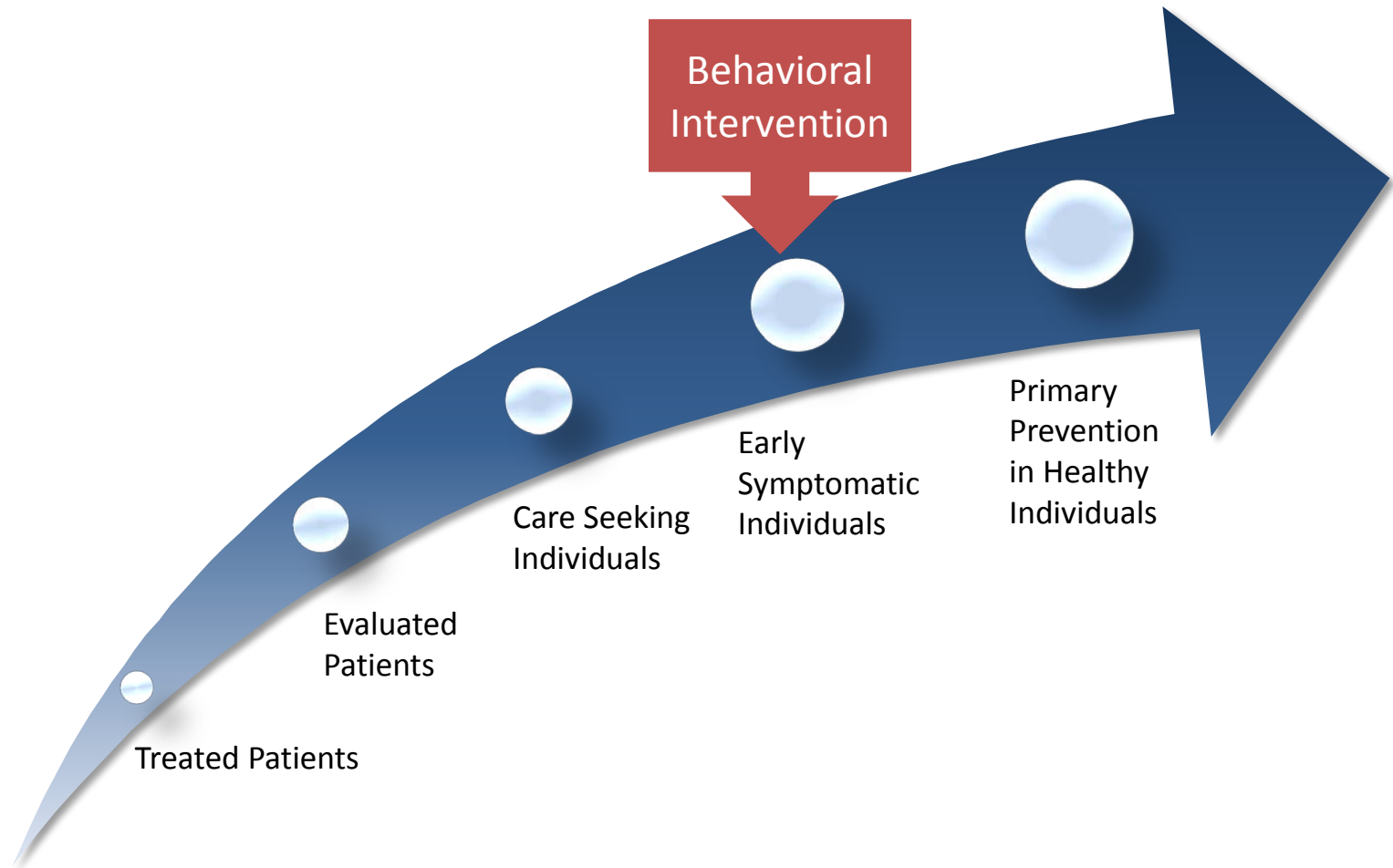
Note: Line reflects size of population

Evolution from Treatment to Prevention



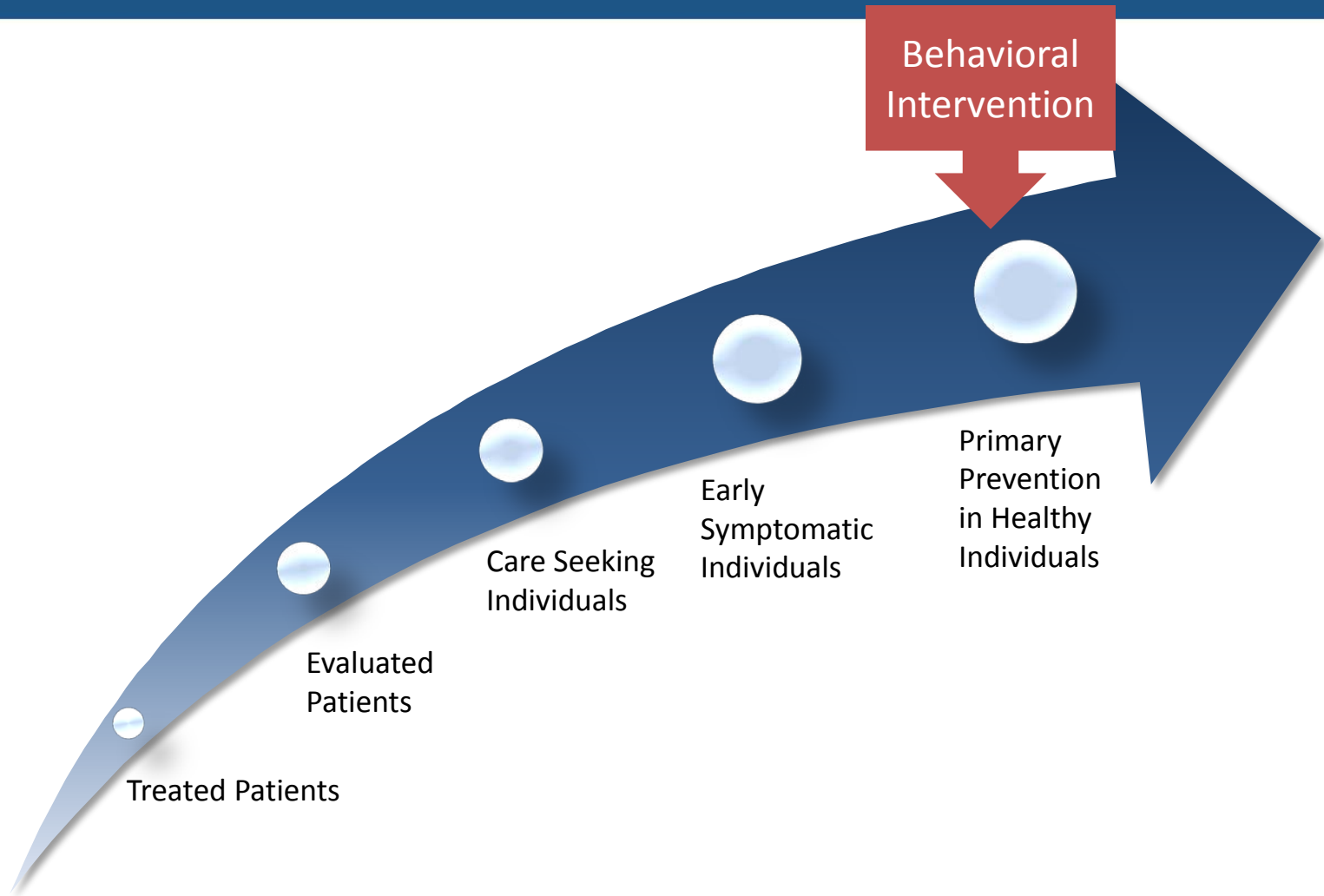
Note: Line reflects size of population

Evolution from Treatment to Prevention



Note: Line reflects size of population

Evolution from Treatment to Prevention



Note: Line reflects size of population

Stepping Stones on the Path to Prevention



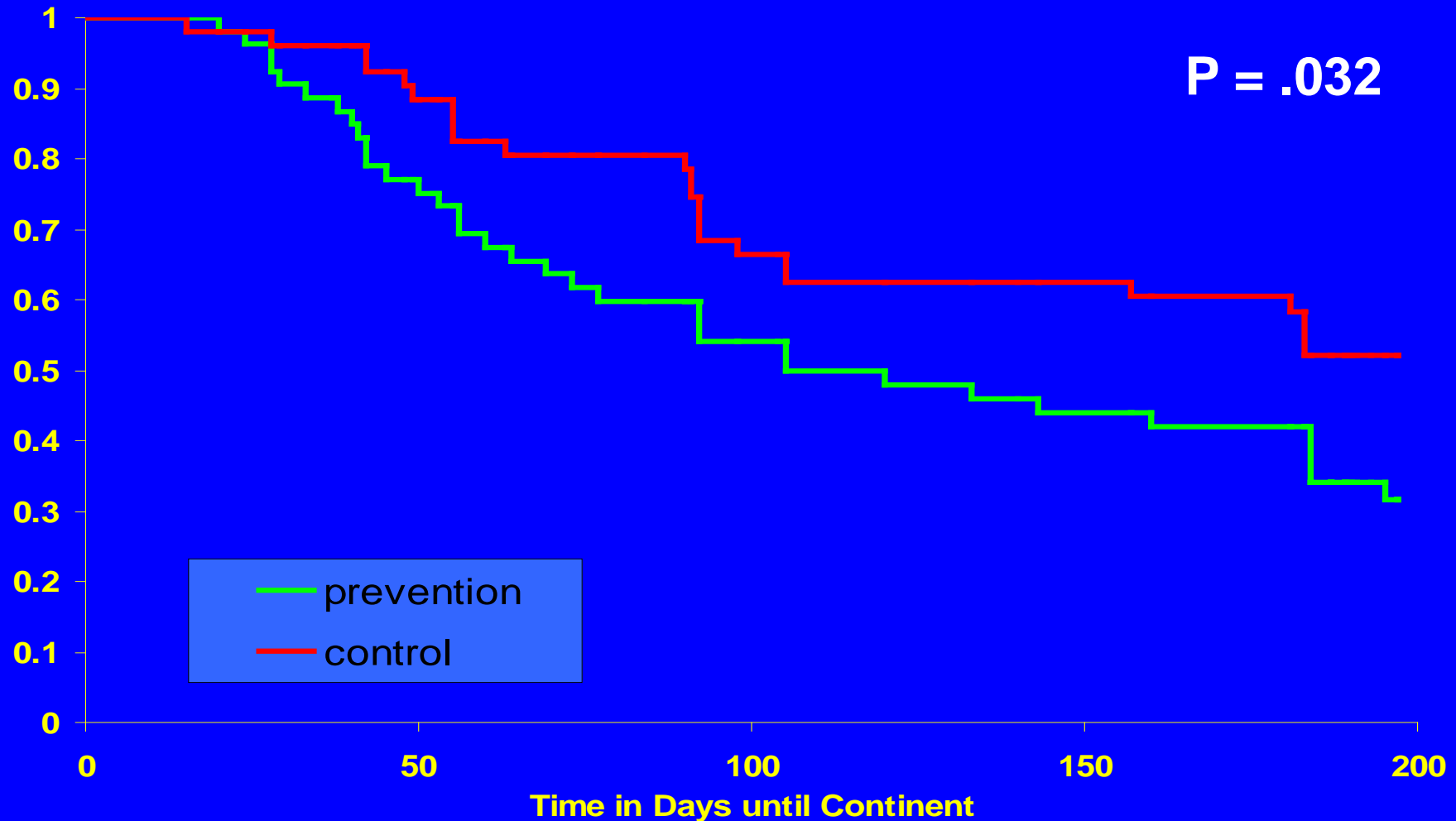
Evidence for Prevention - Men

Pre-operative Rehabilitation to Prevent Post-Prostatectomy UI



- 125 men undergoing radical prostatectomy,
- University of Alabama at Birmingham, Veterans Affairs Medical Center and 7 private urology practices, U.S.A.
- Randomized to:
 - Single session of pre-operative, biofeedback-assisted pelvic floor muscle exercise training and instructions for home exercises
 - Usual care
- Outcome: No accidents on 3 weekly 1-day bladder diaries in a row or on one 7-day bladder diary

Kaplan-Meyer Curves Showing Time to Contingence



Pre-operative Rehabilitation to Prevent Post-Prostatectomy UI



- Continenence Rates
 - 3 months: 48% vs. 32%
 - 6 months: 68% vs. 48%

Post-Prostatectomy UI – Perioperative Rehabilitation



- Number needed to treat to get one additional man out of pads by 6 months was five men
- Cost of the single preoperative biofeedback-assisted pelvic floor muscle training was approximately \$150

Conclusion – Pre-operative Training to Prevent Postoperative Incontinence



- Perioperative behavioral training can hasten recovery of bladder control and reduce the severity of incontinence following radical prostatectomy.
- Urologists should consider referring their radical prostatectomy patients to a continence center for pre- and/or post-operative training or developing the expertise in their own practices.
- Unfortunately, most men undergoing radical prostatectomy do not get perioperative training

Evidence for Prevention - Women

**PREVENTION OF UI BY GROUP BEHAVIORAL
MODIFICATION PROGRAM: A PROSPECTIVE
RANDOMIZED CONTROLLED TRIAL AMONG OLDER
WOMEN IN THE COMMUNITY**

**A.C. Diokno, MD, C.M. Sampelle, Ph.D., RNC,
A.R. Herzog, MA, Ph.D., T.E. Raghunathan, MS, Ph.D.,
Sandra Hines, BSN, MS, K. Messer, BA, C. Karl, RN, M.C. Leite, MA**

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J Urol. 2004 Mar;171(3):1165-71

Prevention of UI: Protocol

CONTROL GROUP (n=195)

- Clinic appointment for baseline measures including pelvic floor muscle (PFM) assessment
- Quarterly phone and mail contact for f/u measures and 3-day voiding diary
- 12 month exit evaluation including PFM assessment

GROUP CLASS (n=164)

- Baseline measures, behavioral modification program (BMP)
- 2 weeks post-BMP assessment & re-enforcement if needed
- Quarterly follow-up
- 12 month exit evaluation including PFM assessment

Mean Age ~65 years

Lost to follow-up: 18 control and 23 Group Class participants

Prevention of UI: Results

- Retained Behavior Modification Program Knowledge (2 and 4 weeks post class)
 - Pelvic Muscle Training (PMT) knowledge - 87%
 - Bladder Training knowledge - 89%
 - Correct PMT technique - 68% (89% were successful with instruction)
- Compared to Control group, Group Class had
 - More subjects with absolute continence at 12 months
 - Significantly more with same or better incontinence at 12 months
 - More subjects with improved pelvic floor muscle strength
 - Significantly less daytime and nocturnal voids

Prevention Of UI: Conclusions

- First prospective RCT of prevention of UI among older women living in community
- Group Behavior Modification teaching followed by brief follow-up instruction is effective in maintaining continence, improved pelvic muscle strength and voiding control
- Behavior Modification Program effects are durable for at least 12 months

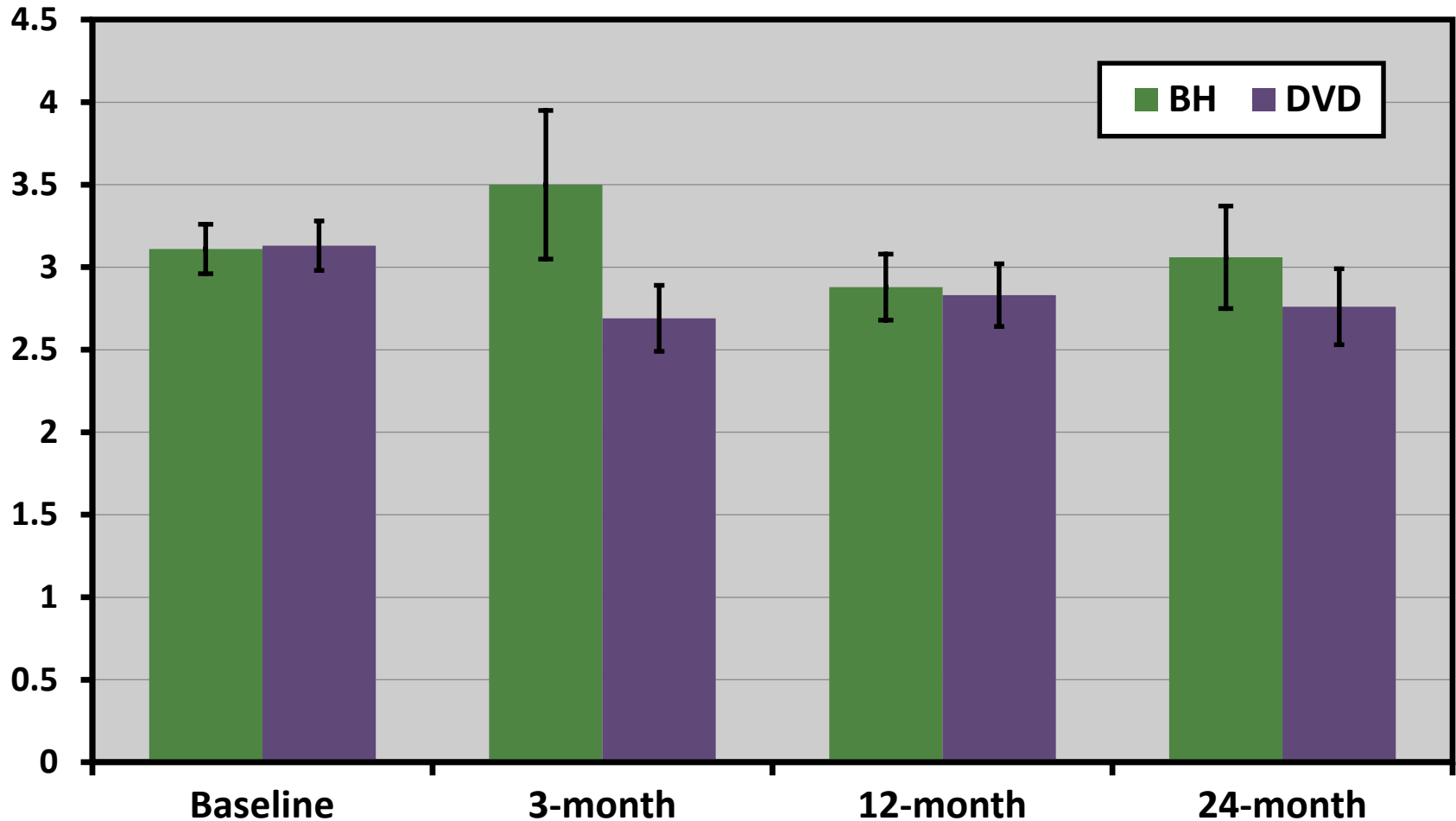
Translating Unique Learning for Incontinence Prevention (TULIP)



- Bladder Health Class (BH Class)
 - Two-hour face-to-face taught by professional
 - Content, practice, & take-home instructions (Pelvic floor muscle exercise, Bladder training, Urgency suppression, the Squeeze trick)
- DVD (BH Class content abbr. to 20 minutes)
 - Viewed on site and taken home
- Sample of 647 enrolled
 - Age mean 63 years (range 55-87 years)
 - Nearly 28% African American
 - BMI 29 (SD 6.35)
- Randomization effective: No differences in demographics, clinical measures between groups at baseline

RESULTS:

International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF)



Discussion

- The two-hour face-to-face BH Class and the DVD are useful for lower urinary tract symptoms (LUTS) prevention
- Method could be employed to build a simple awareness strategy (e.g. invitational mailing), providing bladder control techniques (via DVD or group classes) could benefit MANY motivated women:
 - Appropriate for primary prevention (49%)
 - May also be beneficial for the other 51% who are highly motivated (secondary prevention)

The Contenance Across Continents Trial

Cluster randomised trial of three different community-based continence promotion interventions to improve urinary incontinence among untreated older women

2010 - 2013: Canadian Institutes of Health Research
INTERNATIONAL COLLABORATION
Institute on Aging

2008 - 2012: UK Economic and Social Research Council
INTERNATIONAL COLLABORATION
New Dynamics on Ageing Programme

Organisations Contacted n = 420

Organisations/Clusters randomised n = 71
Attendees n = 763

**Combined
Intervention**

**Continence
Workshop**

**Self-
management**

**Women's
health lecture**

Did not meet eligibility criteria n = 341
Eligible but no consent n = 63
Unknown n = 100

Enrolled in the Trial n = 259

**Combined
n = 61**

**Combined
n = 64**

**Self-
management
n = 70**

**Control
n = 64**

**55 completed
3 mo f/u**

**59 completed
3 mo f/u**

**62 completed
3 mo f/u**

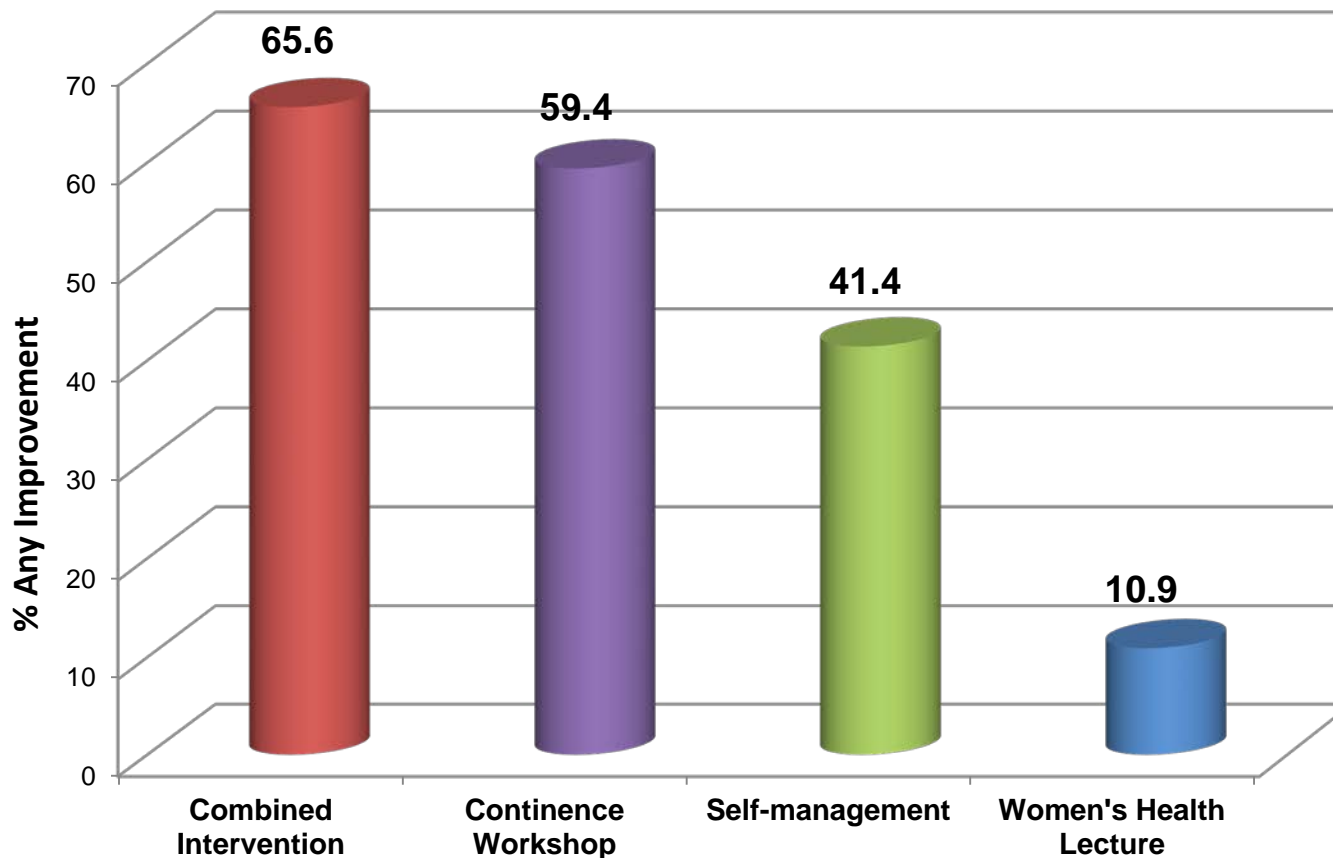
**52 completed
3 mo f/u**

Study Participants

Characteristic	Women who participated in the study (n=259)
Age (mean \pm SD) Range	72 \pm 7,5 years old 60 -95
Living alone	46 %
Self-rated health	
Fair/poor	25 %
Diabetes	26 %
Heart disease	25 %
Arthritis	58 %
Falls in past year	29 %
High school level education or less	66 %
Duration of incontinence	
2-5 years	35 %
>5 years	28 %
Severity of incontinence \geq 1x/day	59 %

3-month telephone follow-up:

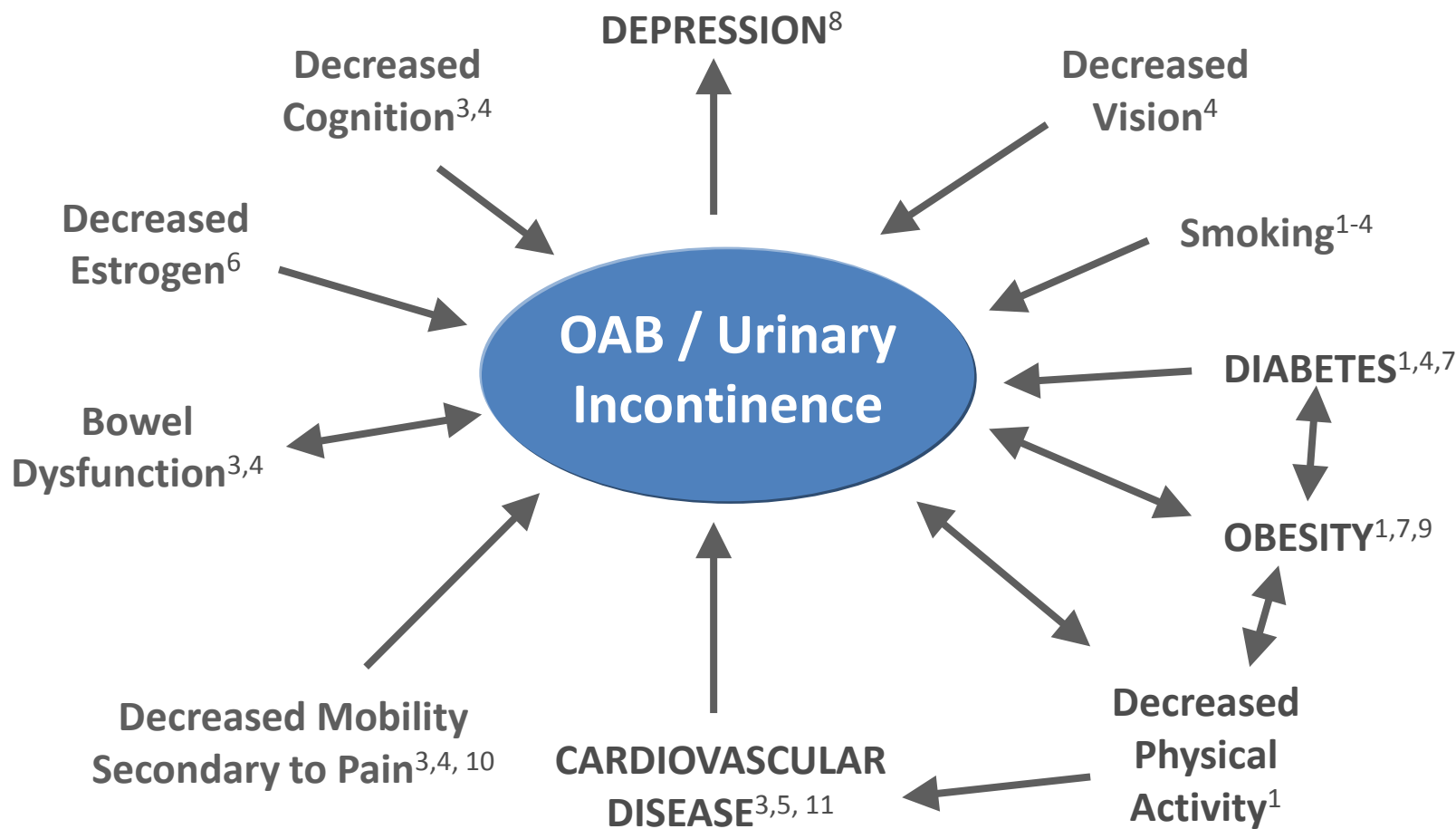
Compared to before the workshop, how would you rate your incontinence symptoms?



CHOICE OF RESPONSE:

- Very much better
- Much better
- A little better
- No change
- A little worse
- Much worse
- Very much worse

Crucial Goal: “Priority Conditions” Must Include LUTS in Research - Bladder Conditions are NOT Quality of Life Issues



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2. de Boer TA et al. *Int Urogynecol J*, 2010 Nov 23; Epub.

3. Hunskar S et al. *2nd Int Consult on Incont*, 2002; 2nd ed: 165-201.

4. McGrowth CW et al. *Age and Aging*, 2006; 35: 16-24.

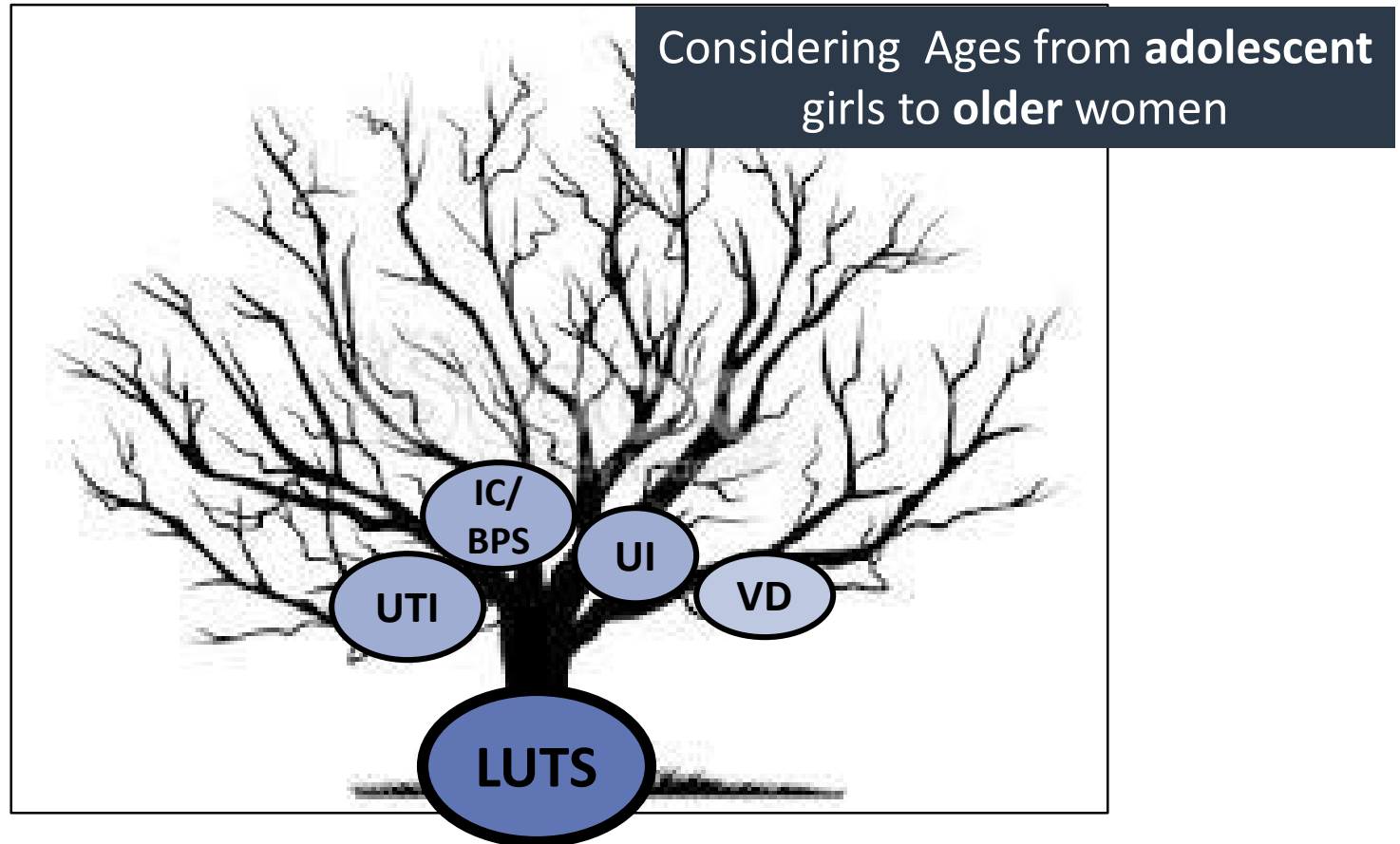
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8. Yip SK et al. *Best Pract Res Clin Obstet Gynaecol*, 2007; 21(2): 321-329.

Prevention of Lower Urinary Tract Symptoms (PLUS) Research Consortium Considers Bladder Health Holistically



LUTS=Lower Urinary Tract Symptoms

UI=Urinary Incontinence

ISD=Intrinsic Urethral Dysfunction

UTI=Urinary Tract Infection

VD=Voiding Dysfunction

IC/BPS=Interstitial Cystitis/Bladder Pain Syndrome

The **PLUS Research Consortium** will utilize

Multiple approaches to study ...

Preventing
LUTS



Promoting
Bladder
Health

...Two Sides of the Same Coin

Social Ecological Model—Influences on Health



PLUS Consortium Investigators (weighted)



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